

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An adjustable vehicular airflow control device comprising;
 - (a) a deflector panel adapted to be disposed on a front section of a vehicle to selectively control airflow about the front section of the vehicle; and
 - (b) an actuator assembly coupled to the deflector panel for both linearly moving the deflector panel and rotating the deflector panel.
2. The adjustable vehicular airflow control device of Claim 1, wherein the actuator assembly is adapted to linearly move the deflector panel independently from rotating the deflector panel.
3. The adjustable vehicular airflow control device of Claim 1, wherein the actuator assembly is adapted to simultaneously move the deflector panel in a linear and rotational manner.
4. The adjustable vehicular airflow control device of Claim 1, wherein the actuator assembly linearly moves the deflector panel in substantially a fore and aft direction relative to the vehicle.
5. The adjustable vehicular airflow control device of Claim 1, wherein the actuator assembly linearly moves the deflector panel in substantially a vertical direction relative to the vehicle.
6. The adjustable vehicular airflow control device of Claim 1, wherein the actuator assembly linearly moves the deflector panel in substantially a fore and aft direction relative to the vehicle and linearly moves the deflector panel in a substantially vertical direction relative to the vehicle.
7. The adjustable vehicular airflow control device of Claim 1, wherein the actuator assembly moves the deflector panel from a stored position in which the deflector panel is substantially flush mounted in an opening in a hood of the front section of the vehicle, and a deployed position in which at least a portion of the deflector panel is disposed above the hood to engage an airstream flowing over the hood.

8. The adjustable vehicular airflow control device of Claim 1, further comprising a controller coupled in communication with the actuator assembly, the controller operable to automatically control the actuator assembly to move the deflector panel based upon a sensed speed of the vehicle.

9. The adjustable vehicular airflow control device of Claim 1, further comprising a controller coupled in communication with the actuator assembly, the controller operable to automatically control the actuator assembly to linearly move and rotate the deflector panel based upon a sensed speed of the vehicle.

10. The adjustable vehicular airflow control device of Claim 1, wherein the actuator assembly is adapted to both linearly move the deflector panel and rotate the deflector panel while the vehicle is in motion.

11. An adjustable vehicular airflow control device comprising;

(a) a deflector panel adapted to be disposed on a front section of a vehicle to selectively control airflow about the front section of the vehicle; and

(b) an actuator assembly coupled to the deflector panel, the actuator assembly adapted to selectively displace the deflector panel substantially in a fore and aft direction relative to the vehicle.

12. An adjustable vehicular airflow control device comprising;

(a) a deflector panel for mounting on the front section of a vehicle;

(b) an actuator assembly coupled to the deflector panel, the actuator assembly adapted to adjust a position of the deflector panel relative to the vehicle; and

(c) a controller coupled in communication with the actuator assembly, the controller operable to automatically control the actuator assembly to adjust the position of the deflector panel based upon a sensed speed of the vehicle.

13. The adjustable vehicular airflow control device of Claim 12, wherein the controller is operable to automatically control the actuator assembly to adjust inclination of the deflector panel based upon the sensed speed of the vehicle.

14. The adjustable vehicular airflow control device of Claim 12, wherein the controller automatically controls the actuator assembly to linearly move the deflector panel based upon the sensed speed of the vehicle.

15. The adjustable vehicular airflow control device of Claim 12, wherein the controller automatically controls the actuator assembly to both linearly move and rotate the deflector panel based upon the sensed speed of the vehicle.

16. A front section of a vehicle comprising:

(a) a hood having a top surface, the top surface having an opening therein;

(b) an adjustable airflow control device comprising:

(i) a deflector panel; and

(ii) an actuator assembly for moving the deflector panel into a stored position in which the deflector panel is substantially flush mounted in the opening, and a deployed position in which at least a portion of the deflector panel is disposed above the top surface to engage an airstream flowing over the top surface, and wherein the actuator assembly adjusts the deployed position of the deflector panel by both linearly and rotatingly displacing the deflector panel.

17. A method of controlling a position of a deflector panel disposed on a front section of a vehicle, the method comprising:

(a) sensing a speed of the vehicle; and

(b) automatically adjusting a position of the deflector panel relative to the vehicle based upon the sensed speed of the vehicle.

18. The method of Claim 17, further comprising automatically adjusting a height of a center of the deflector panel above the front section of the vehicle based upon the sensed speed of the vehicle.

19. The method of Claim 17, further comprising automatically adjusting an inclination of the deflector panel based upon the sensed speed of the vehicle.

20. The method of Claim 17, further comprising automatically adjusting a fore and aft location of the deflector panel based upon the sensed speed of the vehicle.

21. The method of Claim 17, further comprising:

(a) automatically adjusting a height of a center of the deflector panel above the front section of the vehicle based upon the sensed speed of the vehicle;

(b) automatically adjusting an inclination of the deflector panel based upon the sensed speed of the vehicle; and

(c) automatically adjusting a fore and aft location of the deflector panel based upon the sensed speed of the vehicle.

22. The method of Claim 17, further comprising decreasing an inclination of the deflector panel as the determined speed increases.

23. The method of Claim 17, further comprising decreasing a height of a center of the deflector panel as the sensed speed increases.

24. The method of Claim 17, further comprising selectively positioning the deflector panel in a stowed position in which the deflector panel is flush mounted within an opening in a top surface of the front section of the vehicle.

25. The method of Claim 17, further comprising simultaneously adjusting a height of a center of the deflector panel and an inclination of the deflector panel based upon a change in the sensed speed of the vehicle.

26. An adjustable vehicular airflow control device comprising a deflector panel adapted to be disposed on a front section of a vehicle to selectively control airflow about the front section of the vehicle, the deflector panel adjustable in a vertical direction relative to the vehicle and adjustable in inclination relative to the vehicle while the vehicle is moving.

27. An adjustable vehicular airflow control device comprising a deflector panel adapted to be disposed on a front section of a vehicle to selectively control airflow about the front section of the vehicle, the deflector panel adjustable in a fore and aft

direction relative to the vehicle and adjustable in inclination relative to the vehicle while the vehicle is moving.

28. An adjustable vehicular airflow control device comprising a deflector panel adapted to be disposed on a front section of a vehicle to selectively control airflow about the front section of the vehicle, the deflector panel adjustable in a vertical direction relative to the vehicle, a fore and aft direction relative to the vehicle, and in inclination relative to the vehicle.